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NEW SYNONYMS IN THE GENUS *OBRIMA* WALKER (LEPIDOPTERA: NOCTUIDAE), WITH ADDITIONAL DISTRIBUTION RECORDS

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Abstract.—The monotypic genus *Acanthermia* Hampson 1926 is congeneric with *Obrima* Walker 1856 **(new synonym)**. Two **new synonymies** of *Obrima didactica* (Dyar) 1914 **(new combination)** are proposed: *Acanthermia dyari* Hampson (1926) and *Obrima cymbae* Pogue (1998). Additional distributional records from Costa Rica are included. Adults of all *Obrima* species are illustrated to show intraspecific variation.

Key Words: *Acanthermia, Obrima didactica, Obrima pyraloides, Obrima rinconada,* distribution, Costa Rica

The genus *Obrima* Walker 1856 was recently revised (Pogue and Janzen 1998), and, at that time, *Obrima cymbae* Pogue was described as new. While visiting INBio (Instituto Nacional de Biodiversidad) in Costa Rica, Vitor Becker arranged a loan of their *Obrima* collection. With this substantial collection from Costa Rica and the holdings at the National Museum of Natural History, Smithsonian Institution (USNM), it was discovered that *O. cymbae* varies considerably in its forewing coloration from cream to light brown to dark reddish brown and the hindwing is equally variable from cream to rufous to brown. Because of this variation, *O. cymbae* and *Acanthermia dyari* Hampson, 1926 were found to be synonyms of *Rhosologia didactica* Dyar, 1914. This paper resolves these taxonomic problems and illustrates the range of variation in wing color. Updated distribution maps of all *Obrima* species are included based on additional material, as well as the localities reported by Pogue and Janzen (1998).

Obrima Walker

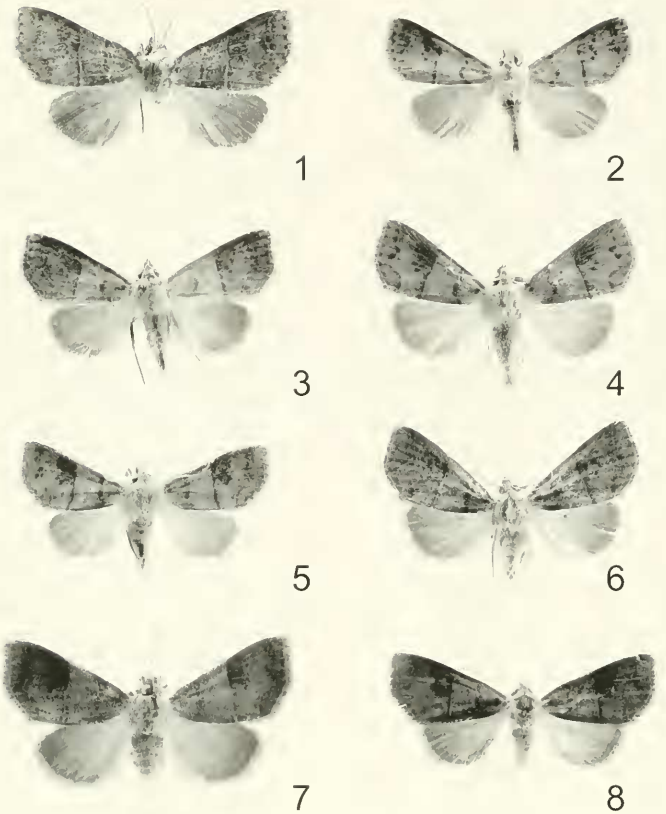
Obrima Walker 1856: 134.—Nye 1975: 343.—Poole 1989: 708.—Poole and Gentili 1996: 759.—Pogue and Janzen 1998: 567. Type species: *Obrima pyraloides* Walker 1856, by monotypy.

Acanthermia Hampson 1926: 248.—Nye 1975: 17.—Poole 1989: 6. Type species: *Acanthermia dyari* Hampson 1926, by original designation. **New synonymy.**

A diagnosis and description of *Obrima* was given by Pogue and Janzen (1998). Synapomorphies include the conical-shaped unscaled frons and large signum in the female genitalia that has a bifurcate apex and a central groove formed by the lateral margins curving toward the center line. Both of these characters are present in *Acanthermia dyari.*

Obrima didactica (Dyar), **new combination**
(Figs. 1–8, 23, 26)

Rhosologia didactica Dyar 1914: 386.—Poole 1989: 870.



Figs. 1–8. Adults of *Obrima didactica* (Dyar). 1, Holotype ♂. Mexico, Sierra de Guerrero, USNM ENT 142598. 2, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002532933. 3, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002532935. 4, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002584614. 5, ♂, Costa Rica, Guanacaste, Est. Murcielago, 8 km surosete de Cuajiniquil, INBIOCRI 001174296. 6, ♀, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002530533. 7, ♀, Costa Rica, Guanacaste, Est. Murcielago, 8 km surosete de Cuajiniquil, INBIOCRI 001182187. 8, ♀, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002532928.

Acanthermia dyari Hampson 1926: 249. **New synonymy.**

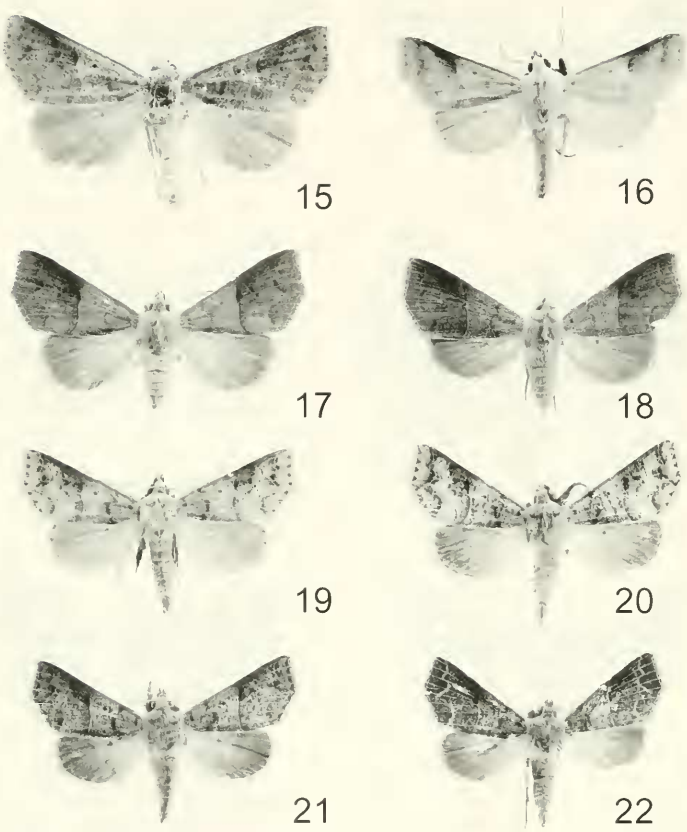
Obrima cymbae Pogue *in* Pogue and Janzen 1998: 574. **New synonymy.**

Description.—The description of *O. cymbae* (Pogue and Janzen 1998) can be referred to this species with the following additions: 1) forewing color is variable, from cream to dark reddish brown, with intermediate colors of light brown and pale reddish brown; 2) the lighter colored specimens have more brown markings in the

Figs. 9–14. Adults of *Obrima pyraloides* Walker. 9, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002587819. 10, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002587822. 11, ♀, Costa Rica, Cartago, Moravia de Chirripo, INBIOCRI 002587987. 12, ♂, Costa Rica, Guanacaste, P. N. Barra Honda, 3 km NW Nacaome, INBIOCRI 002587869. 13, ♀, Costa Rica, Guanacaste, Est. Murcielago, 8 km surosete de Cuajiniquil, INBIOCRI 001182389. 14, ♂, Costa Rica, Guanacaste, Est. Murcielago, 8 km surosete de Cuajiniquil, INBIOCRI 001182388.

forewings; 3) hindwing color is variable from cream with a tinge of light brown to brown, most of the specimens with dark forewings have a rufous hindwing.

Additional material examined.—89 ♂, 84 ♀. COSTA RICA: GUANACASTE: 2 km al O. De la oficina de Biodiversidad, P. N. Barra Honda, 50 m, Apr. 1996 (1 ♀), M. Reyes; 3 km NO Nacaome, P. N. Barra Honda, 100 m, Apr. 1993 (38 ♂, 34 ♀), M. Reyes; Est. Las Palilas, P. N. Rincon de la Vieja, 800 m, 16–23 Apr. 1993 (1 ♀), 8–27 May 1994 (1 ♂), K. E. Taylor; Est. Los Almendros, P. N. Guanacaste, 300 m, 8–13 June 1994 (1 ♀), E. Lopez; Est. Murcielago, 8 km suroeste de Cuajiniquil, 100 m, 19–24 Apr. 1993 (1 ♂, 4 ♀), 3–14 May 1994 (1 ♂, 1 ♀), 18 May–5 June 1993 (2 ♂, 9 ♀), F. A. Quesada, 3 May 1994 (2 ♂, 2 ♀), 15 May–6 June 1993 (7 ♂, 6 ♀),



Figs. 15–22. Adults of *Obrima rinconada* Schaus. 15, Holotype ♂, Mexico, Vera Cruz, Rinconada, USNM ENT 142599. 16, Holotype ♂, of *O. pimaensis* Barnes and Benjamin, U.S.A., Arizona, Pima Co., Baboquivari Mts., USNM ENT 142600. 17, ♀, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002587849. 18, ♀, Costa Rica, Guanacaste, 3 km NO Nacaome, P. N. Barra Honda, INBIOCRI 001324544. 19, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002587841. 20, ♂, Costa Rica, Guanacaste, P. N. Santa Rosa, INBIOCRI 002530542. 21, ♂, Costa Rica, Guanacaste, 3 km NO Nacaome, P. N. Barra Honda, INBIOCRI 001324385. 21, ♂, Costa Rica, Guanacaste, P. N. Barra Honda, INBIOCRI 002172152.

6–23 June 1994 (5 ♀), C. Cano; Est. Palo Verde, P. N. Palo Verde, 10 m, May 1991 (1 ♂), May 1992 (1 ♀), U. Chavarria; Est. Santa Rosa, P. N. Santa Rosa, 300 m, 3–12 June 1992 (1 ♂); Estacion Mengo, SW side Volcan Cacao, 1,100 m, 27 May 1987 (1 ♂), D. H. Janzen, W. Hallwachs; Heda. San Isidro, 6.7 km N Quebrada Grande, 350 m, 3 June 1988 (1 ♀), D. H. Janzen, W. Hallwachs; La Maritza, Hda. Orosi, 550 m, 2–5

Figs. 23–24. Collecting localities of *Obrima*. 23, *O. didactica*. 24, *O. pyraloides*.

June 1986 (1 ♂), W. Hallwachs, D. H. Janzen; P. N. Barra Honda, 100 m, Apr. 1995 (1 ♂), M. Reyes; P. N. Barra Honda, 3 km NW Nacaome, 100 m, 16 May 1988 (3 ♂), Janzen, Hallwachs; P. N. Barra Honda, 900 m Oeste de la oficina de Biodiversidad, 100 m, Apr. 1994 (1 ♂, 2 ♀), M. Reyes; Playa Naranjo, P. N. Santa Rosa, May 1991 (3 ♂, 1 ♀), E. Alcazar; Ref. Nac. Fauna Silvestre Rafael Lucas Rodriguez, Est. Palo Verde,

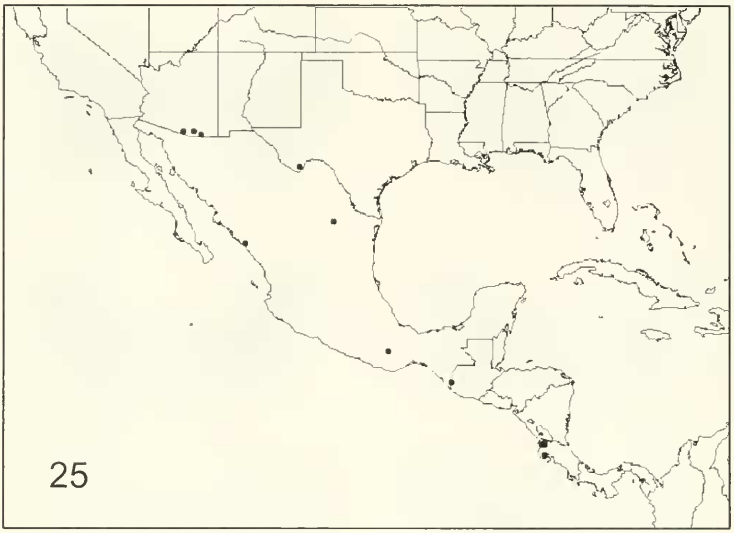
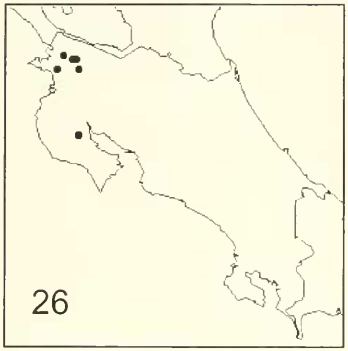


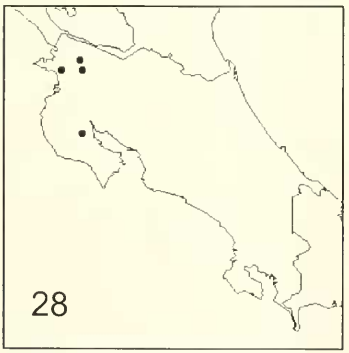
Fig. 25. Collecting localities of *O. rinconada*.

10 m, May 1991 (1 ♂), U. Chavarria; Santa Rosa National Park, 300 m, 13 May 1978 (1 ♀), 15 May 1978 (1 ♂), 15–17 May 1979 (1 ♂, 5 ♀), 18–20 May 1979, (2 ♂, 1 ♀), 24 May 1978 (1 ♂, 1 ♀), 1–3 June 1979 (1 ♂, 1 ♀), D. H. Janzen, Apr. 1983 (3 ♂, 2 ♀), Apr. 1984 (1 ♀), May 1983 (2 ♂, 1 ♀), May 1984 (1 ♂), May 1985 (1 ♂, 1 ♀), D. H. Janzen, W. Hallwachs, 9–11 May 1980 (6 ♂), 12–14 May 1980, D. H. Janzen, W. Hallwachs; Sector Las Pailas, 4.5 km SW del volcan Rincon de la Vieja, 800 m 12 Apr.–4 May 1995 (1 ♀), K. E. Taylor. MEXICO: [State unknown]: Morelos, (1 ♀), Kruger; Sierra de Guerrero, June 1913 (1 ♂), Schaus Coll.; SINALOA: Venadi[ll]o, (1 ♂), Schaus Coll., (2 ♂), B. P. Clark donor.

Distribution (Figs. 23, 26).—In Costa Rica, *O. didactica* is found in lowland dry forest habitat in Guanacaste Province. The type locality is Sierra de Guerrero, Mexico. I have been unable to find a documented latitude and longitude, for this locality and am assuming it is in the state of Guerrero in southwestern Mexico. The two other records from Mexico are difficult to verify. Three specimens were collected in "Venadio," Sinaloa, Mexico. After searching several gazeteers the only locality similar to "Venadio" was Venadillo in Sinaloa. There is no "Venadio" in Mexico. I am assuming that this is the correct locality, and "Venadio" is a misspelling of Venadillo. Venadillo is in the lowland dry west coast of Sinaloa. The second unconfirmed locality is Morelos. There are about 30 localities by this name in Mexico, but only a few are lowland southern Mexico localities. Based on this evidence, the Morelos on the specimen label would most likely be from southern Mexico, excluding the state of Morelos south of Mexico City.

Discussion.—The ♂ holotype of *O. didactica* (Fig. 1) is in the USNM. It has a light brown forewing ground color with a distinct median line bordered by brown, an irregular subterminal brown line, and the





Figs. 26–28. Collecting localities of *Obrima* in Costa Rica. 26, *O. didactica*. 27, *O. pyraloides*. 28, *O. rinconada*.

hindwings are medium brown. This is the light brown phenotype. The dark brown to dark red phenotype was described as *A. dyari* and *O. cymbae*. *Obrima didactica* is sympatric with *O. rinconada* Schaus at "Venadio," Sinaloa, Mexico, which is also the type locality of *A. dyari*.

In Costa Rica the larval host plant is *Lonchocarpus orotinus* Pittier (Fabaceae) which is endemic to Guanacaste (Standley 1937). Other species of *Lonchocarpus* occur in southern Mexico, such as *L. atropurpureus* Benth. and *L. miniflorous* Donn. *Lonchocarpus mimiflorus* is a larval host plant of *O. pyraloides* Walker, 1856. Apparently *O. didactica* is utilizing a different host in Mexico.

Obrima pyraloides Walker
(Figs. 9–14, 24, 27)

Obrima pyraloides Walker 1856: 135.—Nye 1975: 343.—Poole 1989: 708.—Pogue and Janzen 1998: 568.

For a diagnosis and description of *O. pyraloides* see Pogue and Janzen (1998).

The following is additional material examined from Costa Rica and El Salvador.—68 ♂, 49 ♀. COSTA RICA: ALAJUELA: Finca San Gabriel, 16 km ENE Quebrada Grande, 650 m, 5 May 1984 (1 ♂), D. H. Janzen, W. Hallwachs; Sect. San Ramon de Dos Rios, 620 m, 27 Apr.–11 May 1995 (1 ♂), F. A. Quesada. CARTAGO: Moravia de Chirripo, 1,000 m, 10 May 1983 (1 ♀), D. H. Janzen, W. Hallwachs. GUANACASTE: 3 km NO Nacaome, P. N. Barra Honda, 100 m, Mar. 1993 (4 ♂), Apr. 1993 (6 ♂, 1 ♀), 3–30 May 1993 (1 ♂), M. Reyes; 4 km E Casetilla, P. N. Rincon de la Vieja, 750 m, 22 May 1982 (1 ♂), D. H. Janzen, W. Hallwachs; Casa Oeste, Cerro El Hacha, 12 km SE La Cruz, 800 m, Jan. 1988 (1 ♂), A. Chacon; Cerro El Hacha, 12 km SE La Cruz, 300 m, 25 June 1992 (1 ♀); Est. Cacao, Lado SO Vol. Cacao, P. N. Guanacaste, 1,000–1,400 m, June 1990 (2 ♂); Est. Las Pailas, P. N. Rincon de la Vieja, 800 m, 9–27 Feb. 1993 (2 ♂, 2 ♀), 10–27 Mar.

1993 (1 ♂), K. E. Taylor; Est. Los Almendros, P. N. Guanacaste, 300 m, 8–13 June 1994 (1 ♀), E. Lopez; Est. Murcielago, 8 km suroeste de Cuajiniquil, 100 m, 6–24 Jan. 1994 (1 ♂), May 15–June 6 1993 (1 ♂, 4 ♀), C. Cano, May 18–June 5 1993 (4 ♂, 7 ♀), 5–17 July 1994, F. A. Quesada; Est. Palo Verde, P. N. Palo Verde, 10 m, May 1992 (1 ♂, 2 ♀), U. Chavarria; Est. Santa Rosa, 300 m, Feb. 25–Mar. 2 1995 (1 ♂), E. Alfaro; Est. Maritza, W side Volcan Orosi, 600 m, Feb. 26–Mar. 10, 1992 (1 ♂), Feb. 27–Mar. 11, 1992 (1 ♂); Est. Mengo, SW side Volcan Cacao, 1,100 m, July 1987 (1 ♀), July 1987, D. H. Janzen, W. Hallwachs; Est. Santa Rosa, 300 m, Feb. 24–Mar. 7 1995 (1 ♂), A. M. Maroto, Feb. 24–Mar. 8 (1 ♀), R. Villalobos; Juanilama, P. N. Guanacaste, 330 m, 18–28 June 1992 (1 ♀); P. N. Barra Honda, 100 m, Feb. 1992 (1 ♂, 1 ♀), M. Reyes; P. N. Barra Honda, 3 km NW Nacaome, 100 m, 16 May 1988 (1 ♂, 4 ♀), Janzen, Hallwachs; Playa Naranjo, P. N. Santa Rosa, Mar. 1991 (1 ♂), E. Alcazar; R. Gongora, P. N. Guanacaste, 600 m, June 1992 (1 ♀); Ref. Nac. Fauna Silvestre Rafael Lucas Rodriguez, Est. Palo Verde, 10 m, Apr. 1991 (1 ♀), May 1991 (1 ♂, 1 ♀), June 1991 (1 ♂), U. Chavarria; P. N. Santa Rosa, 300 m, Jan. 1985 (1 ♀), Feb. 1983 (6 ♂), 9–17 Mar. 1981 (1 ♂), 10–20 Mar. 1982 (2 ♂), Apr. 1983 (1 ♂), Apr. 1984 (2 ♂), 29–30 Apr. 1980 (2 ♂), May 1983 (4 ♂), May 1984 (1 ♂, 1 ♀), May 1985 (1 ♀), 1 May 1980 (1 ♂), 2–4 May 1980 (3 ♂), 5–6 May 1980 (1 ♀), 9–11 May 1980 (3 ♀), D. H. Janzen, W. Hallwachs, 5–14 Mar. 1979 (1 ♂), 15–17 May 1979 (1 ♀), June 1978 (1 ♂), 5 June 1978 (1 ♂, 5 ♀), 7–9 June 1979 (1 ♀), 21–24 Dec. 1979 (3 ♂), D. H. Janzen; Sect. Palo Verde, 10 m, 4–10 Apr. 1995 (1 ♀), E. Navarro; Sector Las Pailas, 4.5 km SW del volcan Rincon de la Vieja, 800 m, Apr. 12–May 4 1995 (2 ♂, 2 ♀), K. E. Taylor. PUNTARENAS: Est. Queb. Bonita, Res. Biol. Carara, 50 m, May 1992 (1 ♂, 1 ♀), J. C. Saborio. EL SALVADOR: Santa Tecla, 900 m, Apr. 12–May 4 1995 (1 ♀), S. Steinhauser.

Distribution (Figs. 24, 27).—In Costa Rica, this species is widely distributed in Guanacaste from 10 to 1400 m with additional records from Alajuela, Cartago, and Puntarenas Provinces. *Obrima pyraloides* has been collected from northern Mexico, Jamaica, Dominica, and Grenada through Central America to Venezuela, Bolivia, and Paraguay.

Discussion.—The forewing ground color is variable, ranging from cream to light brown to rufous. The basal area of the hindwing can vary from white to ochreous with a broad marginal band that is cream (Fig. 9) or brown (Figs. 11–14) or the veins can be highlighted with rufous scales with only a hint of the band (Fig. 10). The forewing pattern can be reduced to a supapical dark spot and faint median line (Fig. 9) to well developed antemedial, median, and subterminal lines (Fig. 14). The abdomen color exhibits variation similar to the forewing color from cream to light brown to rufous.

Obrima rinconada Schaus
(Figs. 15–22, 25, 28)

Obrima rinconada Schaus 1894: 240.—Poole 1989: 708.—Pogue and Janzen 1998: 571.

Obrima pimaensis Barnes and Benjamin 1925a: 126.—Poole 1989: 708 [jr. syn. of *rinconada*].

Obrima rinconada primaensis Barnes and Benjamin 1925b: 168, [incorrect subsequent spelling of *pimaensis*].

For a diagnosis and description of *O. rinconada* see Pogue and Janzen (1998).

The following is additional material examined from Costa Rica.—23 ♂, 14 ♀. COSTA RICA: GUANACASTE: 3 km NO Nacaome, P. N. Barra Honda, 100 m, Apr. 1993 (2 ♂, 2 ♀), Apr. 1993, M. Reyes; Est. Murcielago, 8 km surosete de Cuajiniquil, 100 m, May 15–June 6, 1993 (1 ♂, 1 ♀), C. Cano, May 18–June 5, 1993 (1 ♂, 1 ♀),

F. A. Quesada; Est. Santa Rosa, P. N. Santa Rosa, 300 m 3–12 June 1992 (1 ♂); P. N. Barra Honda, 100 m, Apr. 1995 (1 ♂), M. Reyes; P. N. Barra Honda, 3 km NW Nacaome, 100 m, 16 May 1988, (1 ♂, 3 ♀), Janzen, Hallwachs; P. N. Santa Rosa, 300 m, May 1983 (8 ♂, 2 ♀), May 1984 (1 ♂, 1 ♀), May 1985 (1 ♂), 18–20 May 1978 (2 ♀), 21–23 May 1979 (1 ♂), 24 May 1978 (1 ♂, 1 ♀), D. H. Janzen, Apr. 1983 (3 ♂), 4–9 June 1981, (1 ♂), D. H. Janzen, W. Hallwachs; Sector Las Pailas, 4.5 km SW del volcan Rincon de la Vieja, 800 m, Apr. 12–May 4 1995 (1 ♀), K. E. Taylor.

Distribution (Figs. 25, 28).—*Obrima rinconada* is restricted to Guanacaste Province in Costa Rica from 100–800 m. This is the only *Obrima* species found in the United States and extends from southern Arizona and Texas to Costa Rica.

Discussion.—The holotype of *O. rinconada* (Fig. 15) is moderately suffused with brown as compared to those that are heavily suffused (Figs. 19–21) or brown (Fig. 22). The holotype of *O. pimaensis* (Fig. 16) is cream with a light brown pattern. Other specimens (Figs. 17–18) show a distinct division of ground color, being lighter proximal to the median line and darker distally. Hindwing color is also variable from cream to brown. The forewing pattern consists of a distinct median line, with a variably distinct subterminal line depending on the degree of brown suffusion.

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